

Summary of plasma and material modeling issues (1)

- **NSTX module-A**
 - good particle pumping
 - power handling for Li/C ok at $P = 2$ MW, possible concern at 4 MW
 - lithium impurity influx to core is low; ELMs may be a problem
- **Convective SOL plasma transport in ITER**
 - may cause wall erosion
 - better understanding of carbon sputtering/transport needed
- **ELM modeling with Li**
 - radiation transport important
 - Li influx to core may be a problem

Summary of plasma and material modeling issues (2)

- **MD modeling of liquid Li**
 - Leonard-Jones potentials for surface atoms
 - bubble growth & He bubble studies underway
- **Coupling MD and kinetic Monte Carlo**
 - illustrated for simple C model; allows long-time surface chemistry
 - extend to real tokamak conditions
- **MD for Li sputtering**
 - high energy (>100 eV) more costly - smaller Δt and larger samples
 - reduction of error bars needed
- **MHD effects for thin films and DiMES**
 - surface tension dominates; if too thin, irregular wetting (holes) may occur; ELM current may push Li aside by $J \times B$
 - Li-Dimes with conducting side walls gives reduced $J \times B$ splashing